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Dirk De Bruin

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER

TRAN, MY CHAU T

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

12/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/552,830	Applicant(s) DE BRUIN ET AL.	
	Examiner MY-CHAU T. TRAN	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Application and Claims Status

1. Applicant's preliminary amendment filed 10/13/2008 are acknowledged and entered.
2. Claims 1-10 were pending. Applicants have amended claims 6-10. No claims were added and/or cancelled. Therefore, claims 1-10 are currently pending and are under consideration in this Office Action.

Priority

3. This instant application is a 371 of PCT/IB04/050434 filed on 04/14/2004, and as a result this instant application has the effective filing date of 04/14/2004.
4. Receipt is acknowledged of papers, i.e. European Patent Office Application No. 03101055.6 filed 04/17/2003, submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

5. Figures 1 and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. Here, the instant specification discloses that figures 1 and 3 are an illustration of a display device known in the art (see specification pg. 3, lines 2, 5-6, and 17; pg. 4, lines 19-23). See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The

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replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

6. Claims 1, 4-7, and 9 are objected to because of the following informalities: These claims contain reference characters in parentheses that refer to the figures of the instant specification and some reference characters are indefinite (e.g. "..."), however, not all the reference characters are found in all figures of the instant specification, which result in confusion. Furthermore, some reference characters are use to denotes different claimed structural features and/or different reference characters are use to denotes the same claimed structural feature. For example, claim 1 recites the structural features of picture elements and electron emitting structures that are both designated with the reference characters of 8, 10, and 11, and as a result, it is unclear whether the instant claimed picture elements and instant claimed electron emitting structures are synonymous, i.e. they are the same structure, or different structure. Consequently, it is suggested that these reference characters in parentheses should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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8. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of “*a screen (1) with a plurality of picture elements (8, 10, 11), a planar anode electrode (12), located in the screen, a plurality of electron emitting structures (8, 10, 11), each corresponding to a picture element, the electron emitting structures (8, 10, 11) being arranged to emit electrons intended to be accelerated towards the anode (12),*” of claim 1 is vague and indefinite because it is unclear as to the metes and bound of the claimed structural features for the instant claimed screen, specifically with regard to the instant claimed ‘*plurality of picture elements (8, 10, 11)*’ and the instant claimed ‘*plurality of electron emitting structures (8, 10, 11)*’. In this recitation, both the instant claimed ‘*plurality of picture elements*’ and the instant claimed ‘*plurality of electron emitting structures*’ are designated with the reference characters of 8, 10, and 11, and as a result, it is unclear whether the instant claimed picture elements and instant claimed electron emitting structures are synonymous, i.e. they are the same structure, or different structures. Accordingly, it is unclear as to the metes and bound of the claimed structural features for the instant claimed screen base on this recitation; and claim 1 and all its dependent claims are rejected under 35 U.S.C. 112, second paragraph. It is suggested that this recitation be rewritten to ‘a screen with a plurality of picture elements wherein the plurality of picture elements comprises a plurality of electron emitting structures that is arranged to emit electrons intended to be accelerated towards a planar anode electrode’ in order to overcome this rejection.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-5, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al. (US Patent 5,627,436).

For ***claims 1-3, 9, and 10***, Suzuki et al. disclose an image display device using a multi-electron beam source (see e.g. Abstract; col. 1, lines 12-15; col. 32-47; col. 7, lines 4-19 and 40-54; col. 8, lines 5-19; figs. 4A, 5A, 7, 15A, 16A, 24, and 25). The device comprises a display panel (ref. #101/201/301) (refers to instant claimed screen), a shift register (ref. #104/204/304), a memory (ref. #105/205/305), and a D/A converter (ref. #107/207/307) (see e.g. col. 9, lines 52-59; col. 12, line 53 thru col. 13, line 3; col. 13, lines 11-18; col. 24, lines 3-10). As illustrated by figures 5A, 16A, and 25, the display panel comprises an XY matrix formed by rows of electron emitting elements (ref. #E_{x1} thru E_{xm}) (refers to instant claimed plurality of picture elements/plurality of electron emitting structure) and columns of electrode (ref. #G₁ thru G_N/GR) (refers to instant claimed planar anode electrode/plurality of electrically separate planar anode portions) (refers to instant claim 3) (see e.g. col. 9, line 60 thru col. 10, line 36; col. 13, lines 20-54; col. 16, lines 11-54). The electron-emitting electrode rows are driven (or scanned), row by row,

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sequentially, and synchronously the modulation signal for one line of image is applied to the columns of electrodes, whereby projection of the respective electron beams onto the fluorescent material is controlled, and the image is displayed by one line at a time (refers to instant claims 2 and 3) (see e.g. col. 10, lines 29-36; col. 13, lines 55-62; col. 16, lines 46-54). As depicted by figure 10, each matrix portions comprises an anode electrode section (ref. #34) wherein the electron is emitted to, an ammeter (ref. #32) that measure the discharged current from the anode electrode (refers to instant claimed means for measuring the anode current), and a substrate (ref. #1) that is below the anode electrode section (see e.g. col. 19, line 9 thru col. 20, line 46). The substrate (ref. #1) comprises a thin film including an electron-emitting portion (ref. #4) (refers to instant claimed light source) between two electrodes (ref. #5 and 6) (refers to instant claimed gate electrode and cathode electrode), and an electron-emitting portion (ref. #3) that emits the electron (refers to instant claimed portion of a photoelectric layer) (see e.g. col. 9, line 60 thru col. 10, line 36; col. 10, lines 16-19; col. 13, lines 20-54; col. 16, lines 11-54; col. 19, line 59 thru col. 20, line 46; figs. 5B, 10, 16B).

Therefore, the device of Suzuki et al. does anticipate the instant claimed invention.

11. Claims 1-6, 9, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Hansen et al. (US Patent 7,158,102 B2; *Filing Date of 04/26/2002*).

For **claims 1-6, 9, and 10**, Hansen et al. disclose a flat panel field emission display system (see e.g. Abstract; col. 1, lines 7-10; col. 1, line 62 thru col. 2, line 19; figs. 1-3). The display system as illustrated by figure 1 comprises a display (ref. #110), a correction system (ref.

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#105), coefficient computation system (ref. #125), and a current measurement system (ref. #120) (see e.g. col. 4, line 52 thru col. 5, line 11).

The display (ref. #110) (refers to instant claimed screen) is a field emission display (FED), and comprises a multilayer structure (ref. #75) that includes a faceplate structure (ref. #70), and a backplate structure (ref. #45) with a plurality of pixels that are arranged in an array of rows and columns (refers to instant claimed plurality of picture elements, and instant claim 3) (see e.g. col. 5, line 12 thru col. 6, line 36; fig. 3). The faceplate structure (ref. #70) comprises an anode (ref. #25) (refers to instant claimed planar anode electrode) (see e.g. col. 5, lines 12-35). As shown by figure 2, each pixel is divided into three subpixels (ref. #80, 81, and 82) wherein each subpixel comprises an emitter/cathode electrode (ref. #60) (refers to instant claimed light source/cathode electrode; and instant claims 9 and 10), a patterned gate electrode (ref. #50) (refers to instant claimed gate electrode; and instant claim 9), an electron-emissive element (ref. #40) (refers to instant claimed electron emitting structure/portion of a photoelectric layer; and instant claim 10), and a conducting focus structure (ref. #90) (see e.g. col. 5, line 12 thru col. 6, line 14; fig. 2). As depicted by figure 3, the display (ref. #110) also includes a column driver (ref. #210) for each column of subpixels wherein each column driver operates in parallel with others column drivers, and a row driver (ref. #200) for each row of subpixels wherein each row driver operates in parallel with others row drivers (refers to instant claims 2 and 3) (see e.g. col. 6, lines 15-36).

Hansen et al. disclose several different embodiments in which the current measurement system (ref. #120) measure the flow of current in the FED (see e.g. col. 6, line 37 thru col. 8, line 59; figs. 4-7). In one embodiment as illustrated by figure 6, the current is measured through the

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conducting focus structures (ref. #90) via its voltage source (ref. #260) (see e.g. col. 7, lines 46-59). The conducting focus structures (ref. #90) as disclosed by Spindt et al. (US Patent 5,528,103), which Hansen et al. incorporated herein by reference (see e.g. col. 5, lines 41-44), are ridges that extend to a greater height than the gate electrode such that the trajectories of electrons emitted from each electron-emissive element to the anode are influenced into a small band. These disclosures imply that the anode electrode (ref. #25) of Hansen et al. is divided into a plurality of electrically separated planar anode portions and each anode portion comprises current measuring means for measuring a portion of a total anode current as claimed in claim 1.

Hansen et al. disclose that for a FED system the correction system (ref. #105) uses the correction coefficient that is obtained by first measuring the emission current in the FED with the current measurement system (ref. #120) (see e.g. col. 5, lines 4-11; fig. 1). In general, the correction system comprises a coefficient memory (ref. #515) (refers to instant claimed memory; and instant claims 4 and 5), and multipliers (ref. #550, 551, and 552) (refers to instant claim 6) (see e.g. col. 8, line 60 thru col. 10, line 33; figs. 8-11).

Therefore, the device of Hansen et al. does anticipate the instant claimed invention.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 1-7, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (US Patent 7,158,102 B2; *Filing Date of 04/26/2002*) in view of Xie et al. (US Patent 6,307,327 B1).

For *claims 1-6, 9, and 10*, Hansen et al. disclose a flat panel field emission display system (see e.g. Abstract; col. 1, lines 7-10; col. 1, line 62 thru col. 2, line 19; figs. 1-3). The display system as illustrated by figure 1 comprises a display (ref. #110), a correction system (ref. #105), coefficient computation system (ref. #125), and a current measurement system (ref. #120) (see e.g. col. 4, line 52 thru col. 5, line 11).

The display (ref. #110) (refers to instant claimed screen) is a field emission display (FED), and comprises a multilayer structure (ref. #75) that includes a faceplate structure (ref. #70), and a backplate structure (ref. #45) with a plurality of pixels that are arranged in an array of rows and columns (refers to instant claimed plurality of picture elements, and instant claim 3) (see e.g. col. 5, line 12 thru col. 6, line 36; fig. 3). The faceplate structure (ref. #70) comprises an anode (ref. #25) (refers to instant claimed planar anode electrode) (see e.g. col. 5, lines 12-35). As shown by figure 2, each pixel is divided into three subpixels (ref. #80, 81, and 82)

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wherein each subpixel comprises an emitter/cathode electrode (ref. #60) (refers to instant claimed light source/cathode electrode; and instant claims 9 and 10), a patterned gate electrode (ref. #50) (refers to instant claimed gate electrode; and instant claim 9), an electron-emissive element (ref. #40) (refers to instant claimed electron emitting structure/portion of a photoelectric layer; and instant claim 10), and a conducting focus structure (ref. #90) (see e.g. col. 5, line 12 thru col. 6, line 14; fig. 2). As depicted by figure 3, the display (ref. #110) also includes a column driver (ref. #210) for each column of subpixels wherein each column driver operates in parallel with others column drivers, and a row driver (ref. #200) for each row of subpixels wherein each row driver operates in parallel with others row drivers (refers to instant claims 2 and 3) (see e.g. col. 6, lines 15-36).

Hansen et al. disclose several different embodiments in which the current measurement system (ref. #120) measure the flow of current in the FED (see e.g. col. 6, line 37 thru col. 8, line 59; figs. 4-7). In one embodiment as illustrated by figure 6, the current is measured through the conducting focus structures (ref. #90) via its voltage source (ref. #260) (see e.g. col. 7, lines 46-59). The conducting focus structures (ref. #90) as disclosed by Spindt et al. (US Patent 5,528,103), which Hansen et al. incorporated herein by reference (see e.g. col. 5, lines 41-44), are ridges that extend to a greater height than the gate electrode such that the trajectories of electrons emitted from each electron-emissive element to the anode are influenced into a small band. These disclosures imply that the anode electrode (ref. #25) of Hansen et al. is divided into a plurality of electrically separated planar anode portions and each anode portion comprises current measuring means for measuring a portion of a total anode current as claimed in claim 1.

Hansen et al. disclose that for a FED system the correction system (ref. #105) uses the correction coefficient that is obtained by first measuring the emission current in the FED with the current measurement system (ref. #120) (see e.g. col. 5, lines 4-11; fig. 1). In general, the correction system comprises a coefficient memory (ref. #515) (refers to instant claimed memory; and instant claims 4 and 5), and multipliers (ref. #550, 551, and 552) (refers to instant claim 6) (see e.g. col. 8, line 60 thru col. 10, line 33; figs. 8-11).

The teachings of Hansen et al. differ from the presently claimed invention as follows:

For **claim 7**, Hansen et al. fail to disclose means for multiplexing current data measured by said current measuring means.

However, Xie et al. teach the limitations that are deficient in Hansen et al. as follows:

For **claim 7**, Xie et al. disclose a method and apparatus for controlling the spacer visibility in a field emission display (FED) (see e.g. Abstract; col. 1, lines 6-8; col. 1, line 66 thru col. 2, line 14; figs. 1-3). As illustrated by figure 3, the FED (ref. #100) includes a correction circuit (ref. #104) that comprises a memory (ref. #152) and a multiplexer (ref. #158) (see e.g. col. 4, lines 3-26).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to disclose means for multiplexing current data measured by said current measuring means as taught by Xie et al. in the device of Hansen et al. One of ordinary skill in the art would have been motivated to disclose means for multiplexing current data measured by said current measuring means in the device of Hansen et al. for the advantage of providing a correction circuit that renders spacers invisible over the entire luminance range of a FED (see Xie: col. 2, lines 15-23; col. 5, line 64 thru col. 6, line 7). Additionally, both Hansen et al. and

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Xie et al. disclose that the display is a field emission display (see Hansen: fig. 2; Xie: fig. 2). Furthermore, one of ordinary skill in the art would have a reasonable expectation of success in the combination of Hansen et al. and Xie et al. because both the display system of Hansen et al. and Xie et al. include a correction circuit system and as a result the type of correction circuit system use would be a choice of experimental design and is considered within the purview of the cited prior art.

Therefore, the combine teachings of Hansen et al. and Xie et al. do render the device of the instant claims *prima facie* obvious.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MY-CHAU T. TRAN whose telephone number is (571)272-0810. The examiner can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MY-CHAU T. TRAN/
Primary Examiner, Art Unit 2629

December 19, 2008